IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application No:	**10/708,671**
Filing Date:	**March 18, 2004**
Applicant(s)	**Timothy G. Offerle**
Confirmation No:	**2670**
Group Art Unit:	**3663**
Examiner:	**Tuan C. To**
Title:	**METHOD AND APPARATUS FOR CONTROLLING BRAKE-STEER IN AN AUTOMOTIVE VEHICLE IN REVERSE**
Attorney Docket No:	**81095823 (36190-67)**
Customer No:	**28549**

Mail Stop Appeal Brief - Patents
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P. O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF

This brief is submitted in support of the Notice of Appeal of the Final Rejection filed August 1, 2008.

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I. Real Party in Interest

The real party in interest in this matter is Ford Global Technologies, LLC, which is a wholly owned subsidiary of Ford Motor Company, both of Dearborn, Michigan (hereinafter "Ford").

II. Related Appeals and Interferences

There are no other known appeals or interferences which will directly affect or be directly affected by or have bearing on the Board's decision in the pending appeal.

III. Status of the Claims

Claims 27-32 are pending in the application. Claims 1 and 15-26 have been canceled. Claims 2-14 and 33-35 have been withdrawn from consideration.

The rejection of Claims 27-32 is being appealed.

IV. Status of Amendments

No amendments were filed following the Final Rejection.

V. Summary of Claimed Subject Matter

Claim 27 is the only independent claim in this case. Claim 27 is best understood with reference to Figures 2-3 and 11-15, and with the following citations to Appellant's specification: Paragraph 66, at lines 1-5; Paragraph 101 at. lines 1-12; and Paragraph 113 at lines 1-11.

Independent Claim 27

A vehicle, 10, having a shift lever, 62, having a reverse position generating a reverse position signal. A controller, 26, is coupled to shift lever 62. Controller 62 applies brake-steer in response to the reverse position signal.

VI. Grounds of Rejection to be Reviewed on Appeal

1. The rejection of Claims 27 and 32 under 35 U.S.C. §103(a) as being unpatentable over Tanaka et al (US 2003/0156045 A1) in view of Bedner et al (US 2002/0198646 A1).

2. The rejection of Claim 28 under 35 U.S.C. § 103(a) as being unpatentable over Tanaka et al (US 2003/0156045 A1) and Bedner et al (US 2002/0198646 A1), in view of Spillane et al (US 2003/0200016 A1).

3. The rejection of Claims 29-31 under 35 U.S.C. § 103(a) as being unpatentable over Tanaka et al (US 2003/0156045 A1), and Bedner et al (US 2002/0198646 A1), and further in view of Ritz et al (US 2002/0060103 A1).

VII. Arguments

1. The Examiner states that Tanaka discloses a system or method of controlling a motor vehicle including a shift lever having a reverse position generating a reverse position signal which is communicated with a parking assist electronic control unit. The Examiner admits that Tanaka's ECU(2) is not disclosed as applying brake steer in response to a reverse position signal; for this, the Examiner looks to Bedner, which the Examiner asserts, teaches a control unit which operates both braking and steering control. The Examiner uses this assertion as a foundation for a further assertion that Bedner's control unit 26 applies brake steer.

The Examiner admits further that Bedner fails to include a shift lever but indicates that such feature "is inherently included since the vehicle should include a shift lever for control driving forward or backward." The Examiner concludes with the assertion that "it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system as taught by Tanaka et al. to include the teaching of control brake-steer in response to the reverse position signal as taught in Bedner et al. so that effectively control the stability of vehicle when getting into a parking lot."

The Tanaka reference has been discussed at length in Applicant's earlier filed appeal brief, and Applicant will not belabor the point. Suffice it to say, Tanaka teaches nothing regarding the use of brake steering during reverse maneuvers. Rather, Tanaka teaches speed control via the vehicle's service brakes during reverse maneuvers. Bedner on the other hand, teaches the use of steering control and brakes to control yaw. In this regard, the Board's attention is directed to Bedner at paragraphs 2 and 3. Thus, at paragraph 2 Bedner states:

"The technical field of this application is vehicle chassis control with coordinated brake and steering control."

And, at paragraph 3 Bedner states the following:

"Braking or acceleration of a vehicle on a split coefficient surface, wherein one or more wheels on one side of the vehicle encounter a significantly larger coefficient of friction with the road surface than one or more on the other side of the vehicle, can produce a large difference in longitudinal forces that tend to produce an undesired yaw moment(rotation) of the vehicle."

Bedner continues his specification with the teaching to use a steering correction that is a steering wheel, or geometry, correction if yaw is encountered. If the steering geometry correction is not available, and in the presence of a split coefficient of friction surface, then the brakes are applied in a certain manner so as to avoid yaw. In this regard, the Board's attention is directed to Bedner at paragraph 13, wherein Bedner states:

"At Step 108, the routine will determine if the vehicle is equipped with rear wheel steering, if such determination is necessary, and also if the rear steering is operating correctly."

In other words, Bedner teaches the use of a rear wheel steering system with selective control of the brakes, in order to avoid yaw while operating in a forward direction. Bedner is devoid of any teaching of the use of brake steering to operate a vehicle while the vehicle is running in a reverse direction. Rather, Bedner teaches steering the road wheels using a steering gear mounted at the rear wheels, coupled with operation of the brakes, to avoid a yaw condition. As a result, Appellants respectfully submit that neither Tanaka, nor Bedner, whether taken singly or in combination with each other, either teach or suggest Appellants' claimed invention. Indeed, were one to combine Tanaka and Bedner, it would not be possible to achieve a system as

described and claimed by Appellants, if for no other reason than Bedner teaches nothing regarding operation of a vehicle in a reverse direction, nor does it teach anything about brake steering. As a result, Claim 27 as well as Claim 32, which depends from Claim 27, are allowable over the Examiner's rejection.

2. As noted above, Claim 28 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Tanaka in view of Bedner and further in view of Spillane et al. (U.S. Publication 2003/0200016). The Examiner employs Spillane for the teaching of a transmission controller controlling the mode of a transfer case. However, Spillane, which is assigned to the assignee of the present invention, teaches nothing regarding the use of brake steering while a vehicle is in a reverse operating mode. As a result, Claim 28, which depends from Claim 27, is allowable over the Examiner's rejection.

3. Claims 29-31 all depend from Claim 27, which has been discussed at length. In making this rejection, the Examiner adds Ritz to Tanaka and Bedner. Although Ritz deals with brake steering, Ritz teaches away from the use of brake steering during reverse movement of a vehicle. Thus, at paragraph 41, Ritz teaches that:

"It could also be useful to deactivate single-sided steering-supporting brake operation when reversing."

In other words, Ritz teaches the deactivation of brake steering during reverse operation. The Examiner states that it would have been obvious to combine Tanaka and Bedner with Ritz "in order to bring the vehicle driver a comfort of driving and a safety of moving when the vehicle is controlled to backup." However, in making this statement the Examiner fails to make a prima facie case of obviousness, because its justification is hardly anything more than a statement of intended result, without the benefit of any specifics. The fact remains that neither Tanaka, nor

Bedner, nor Ritz, whether taken singly, or in combination with each other, either teach or suggest Applicant's invention as set forth in either Claim 27, or in any of the Claims depending therefrom; e.g. Claims 29-31. As a result, each of Claims 29-31 should be passed to issue over the Examiner's rejection.

VIII. Conclusion

For the foregoing reasons, Appellants respectfully request that the Board direct the Examiner in charge of this examination to withdraw the rejections and to issue Claims 27-32 remaining in this case.

Please charge any fees required in the filing of this appeal to deposit account 06-1510.

Respectfully submitted,

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IX. Claims Appendix

1. (Canceled)

2. (Withdrawn) A method as recited in claim 9 wherein generating a reverse direction signal comprises generating a reverse direction from a shift lever.

3. (Withdrawn) A method as recited in claim 9 wherein generating a reverse direction signal comprises generating a reverse direction from a push button.

4. (Withdrawn) A method as recited in claim 9 wherein generating a reverse direction signal comprises generating a reverse direction from a transmission controller.

5. (Withdrawn) A method as recited in claim 9 wherein generating a reverse direction signal comprises generating a reverse direction from a wheel speed sensor.

6. (Withdrawn) A method as recited in claim 9 wherein applying brake-steer comprises applying at least one brake at a first wheel to reduce a vehicle turning radius.

7. (Withdrawn) A method of controlling an automotive vehicle comprising:

generating a reverse direction signal corresponding to a reverse direction of the vehicle; and

applying brake-steer in response to the reverse direction signal by applying an increased drive torque to a second wheel relative to a first wheel.

8. (Withdrawn) A method as recited in claim 9 wherein applying brake-steer comprises applying brake-steer to a front wheel.

9. (Withdrawn) A method of controlling an automotive vehicle comprising:

generating a reverse direction signal corresponding to a reverse direction of the vehicle; and

applying brake-steer in response to the reverse direction signal by proportioning brake steer between a front wheel and a rear wheel.

10. (Withdrawn) A method as recited in claim 9 wherein proportioning comprises proportioning between the front and rear wheel in response to a transfer case mode.

11. (Withdrawn) A method as recited in claim 9 further comprising determining a steering wheel angle and wherein applying brake-steer comprises applying brake-steer in response to the reverse direction signal and steering wheel angle.

12. (Withdrawn) A method of controlling an automotive vehicle comprising:

determining a yaw rate;

generating a reverse direction signal corresponding to a reverse direction of the vehicle: and

applying brake-steer in response to the reverse direction signal and wherein applying brake-steer comprises applying brake-steer in response to the reverse direction signal and said yaw rate.

13. (Withdrawn) A method of controlling an automotive vehicle comprising:

determining a steering wheel torque;

generating a reverse direction signal corresponding to a reverse direction of the vehicle; and

applying brake-steer in response to the reverse direction signal determining a steering wheel torque and wherein applying brake-steer comprises applying brake-steer in response to the reverse direction signal and steering wheel torque.

14. (Withdrawn) A method as recited in claim 9 further comprising determining a steering wheel angle and a vehicle velocity and wherein applying brake-steer comprises applying brake-steer in response to the reverse direction signal and steering wheel angle and vehicle velocity.

15. – 26. (Cancelled)

27. (Original) A vehicle comprising:

a shift lever having a reverse position generating a reverse position signal; and

a controller coupled to the shift lever, said controller applying brake-steer in response to the reverse position signal.

28. (Original) A vehicle as recited in claim 27 further comprising a transfer case having a transfer case mode, said controller changing the transfer case mode based on brake-steer.

29. (Original) A vehicle as recited in claim 27 wherein said controller is programmed to apply brake-steer by applying a first brake and a second brake to reduce the turning radius of the vehicle.

30. (Original) A vehicle as recited in claim 27 wherein said controller is programmed to apply brake-steer by applying at least one brake at a first wheel to reduce a vehicle turning radius.

31. (Original) A vehicle as recited in claim 27 wherein said controller is programmed to apply brake-steer by applying an increased drive torque to a second wheel relative to the first wheel.

32. (Original) A vehicle as recited in claim 27 further comprising a steering wheel angle sensor generating a steering wheel angle signal, said controller programmed to apply brake-steer in response to the reverse directional signal and the steering wheel angle signal.

33. (Withdrawn) A vehicle as recited in claim 27 further comprising a yaw rate sensor generating a yaw rate signal, said controller programmed to apply brake-steer in response to the reverse direction signal and yaw rate signal.

34. (Withdrawn) A vehicle as recited in claim 27 further comprising a steering wheel torque sensor generating a steering torque signal, said controller programmed to apply brake-steer in response to the reverse direction signal and steering torque signal.

35. (Withdrawn) A vehicle as recited in claim 27 further comprising a steering wheel angle sensor generating a steering wheel angle signal and a vehicle velocity sensor generating a vehicle velocity signal, said controller programmed to apply brake-steer in response to the reverse direction signal and steering wheel angle and vehicle velocity signal.

X. Evidence Appendix

None.

XI. Related Proceedings Appendix

None.